

## STATUS OF THE CLAIMS

1. **(Currently amended)** A DC voltage generator comprising:  
a digital pulse modulation (DPM) generator ~~for generating a periodic bit-stream~~  
preconfigured to encoding-encode a desired DC voltage level in the average value of the  
bit-stream; and  
an analog averaging circuit ~~for-receiving and decoding the periodic bit-stream for~~  
generatingso as to generate an average DC voltage corresponding to the desired DC  
voltage level.
2. **(Original)** The DC voltage generator of claim 1 wherein the DPM generator comprises a memory based periodic bit-stream generator circuit.
3. **(Currently amended)** The DC voltage generator of claim 2 wherein the DPM generator comprises a programming means for selecting the bit-stream encoding the desired DC voltage level.
4. **(Currently amended)** The DC voltage generator of claim 1 wherein the DPM generator comprises a pulse density modulation (PDM) generator circuit for encoding the desired DC voltage level in a PDM periodic bit-stream.
5. **(Currently amended)** The DC voltage generator of claim 1 wherein the DPM generator comprises a pulse width modulation (PWM) generator circuit for encoding the desired DC voltage level in a PWM periodic bit-stream.
6. **(Currently amended)** The DC voltage generator of claim 1 wherein the DPM generator is memory based and comprises:  
a circular shift register having means for receiving a series of bits encoding ~~a-the desired DC~~  
voltage level in a bit-stream; means for serially outputting the bits and means for circling  
the series of bits output to the means for receiving.

7. **(Currently amended)** The DC voltage generator of claim 6 wherein the DPM generator further comprises a programming means for selecting the series of bits encoding the desired DC voltage level, said programming means providing the bit-stream to the means for receiving of the circular shift register.
8. **(Original)** The DC voltage generator of claim 6 wherein the bit-stream is a pulse density modulation bit-stream.
9. **(Original)** The DC voltage generator of claim 6 wherein the bit-stream is a pulse width modulation bit-stream.
10. **(Original)** The DC voltage generator of claim 7, wherein the programming means comprises a software based  $\Sigma\Delta$  modulator.
11. **(Withdrawn)** The DC voltage generator of claim 1 wherein the DPM generator is memory based and comprises a linear feedback shift register.
12. **(Withdrawn)** The DC voltage generator of claim 4 wherein the PWM generator is memory based and comprises:
  - a counter for outputting a count; and
  - a comparator for receiving the count, comparing the count to a reference value, and outputting the PWM periodic bit-stream in response to the comparison of the count and reference value.
13. **(Withdrawn)** The DC voltage generator of claim 1 wherein the DPM generator is an automated test equipment.
14. **(Original)** The DC voltage generator of claim 1 wherein the analog averaging circuit comprises a capacitor and resistor for generating the average DC voltage.
15. **(Currently amended)** The DC voltage generator of claim 1 further comprising control means for varying the periodic bit-stream whereby the desired DC voltage level is controlled for temperature compensation.

16. **(Withdrawn)** The DC voltage generator of claim 15, wherein the control means comprises means for varying a bit rate of the periodic bit-stream.
17. **(Withdrawn)** The DC voltage generator of claim 1 further comprising asynchronous control means for asynchronously controlling the DPM generator.
18. **(Original)** The DC voltage generator of claim 1 wherein the DPM generator and analog averaging circuit are co-integrated on a chip.
19. **(Currently amended)** A method of generating a desired DC voltage comprising the steps of:  
selecting a desired DC voltage level;  
generating a periodic bit-stream encoding a the desired DC voltage level in an average value of the periodic bit-stream; and  
averaging the periodic bit-stream to decode and produce the a DC voltage corresponding to the desired DC voltage level.
20. **(Original)** The method of claim 19 wherein the step of generating comprises programming the periodic bit-stream in a memory and serially outputting the bit-stream.
21. **(Currently amended)** The method of claim 20 ~~wherein the memory comprises a circular shift register~~ further comprising the step of encoding the desired DC voltage level in a series of bits and the step of generating includes periodically cycling through the series of bits so as to generate the periodic bit-stream.
22. **(Withdrawn)** The method of claim 20 wherein the memory comprise a linear feedback shift register.
23. **(Currently amended)** The method of claim 20 wherein the memory is provided by ~~an~~ automated test equipment.

24. **(Currently amended)** The method of claim 20 ~~wherein the periodic bit stream is further~~  
comprising the step of encoding the desired voltage level in a pulse width modulation or a  
pulse density modulation bit stream.
25. **(Currently amended)** The method of claim 19 wherein the step of generating comprises the  
steps of:  
~~Cyclically~~cyclically counting a counter value;  
~~Comparing~~comparing the counter value to a reference value; and  
~~Outputting~~outputting a bit-stream value in response to the comparison of the counter value  
and reference value.
26. **(Original)** The method of claim 19 wherein the step of averaging comprises filtering the  
periodic bit-stream.
27. **(Currently amended)** The method of claim 19 further comprising the step of controlling the  
periodic bit-stream to control the DC voltage level for temperature compensation.
28. **(Withdrawn)** The method of claim 27 wherein the step of controlling comprises varying a  
bit rate of the periodic bit stream.
29. **(Withdrawn)** The method of claim 19 further comprising the step of asynchronously  
controlling the generation of the periodic bit stream.
30. **(New)** The DC voltage generator of claim 2 wherein the memory based period bit stream  
generator circuit includes a memory, operatively configured to contain a series of bits, and a  
cycling circuit operatively configured to cycle the series of bits so as to generate the periodic  
bit-stream.
31. **(New)** A DC voltage generator comprising:  
a digital pulse modulation generator that includes:  
a memory operatively configured to store a series of bits that encodes a desired DC  
voltage level as the average value of the series of bits; and

cycling circuitry operatively configured to cycle the series of bits so as to generate a periodic bit-stream; and  
an analog averaging circuit for receiving and decoding the period bit-stream so as to generate an average DC voltage corresponding to the desired DC voltage level.

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